Red Wolf Recovery Program

Photo credit: Joey Hinton

2nd Quarter Report

January - March 2011

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Wildlife Biologists: Art Beyer, Chris Lucash, Ford Mauney, Michael L. Morse
Biological Technician: Ryan Nordsven
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www.fws.gov/redwolf

trackthepack.blogspot.com

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The Red Wolf Recovery Program

The red wolf (*Canis rufus*) is one of the most endangered canids in the world. Once occurring throughout the eastern and south-central United States, red wolves were decimated by predator-control programs and the loss and alteration of habitats. By the 1970s, these activities had reduced the red wolf population to a small area along the Gulf coast of Texas and Louisiana. To protect the species from extinction, the U.S. Fish and Wildlife Service initiated efforts to locate and capture as many red wolves as possible for the purposes of establishing a program to breed the species in captivity and one day reintroduce the species into a portion of its former range. More than 400 canids were captured in coastal areas of Texas and Louisiana, but only 17 were identified as pure red wolves. Fourteen of these wolves would become the founding members of the captive-breeding program and the ancestors of all red wolves existing today.

The first litter of red wolves born in captivity occurred in 1977. Within a few years red wolves were successfully reproducing in captivity, allowing the U.S. Fish and Wildlife Service to consider reintroducing the species in the wild. In 1987, four male-female pairs of red wolves were released in Alligator River National Wildlife Refuge (ARNWR) in northeastern North Carolina and designated as an experimental population. Since then, the experimental population has grown and the recovery area expanded to include four national wildlife refuges, a Department of Defense bombing range, state-owned lands, and private lands, encompassing about 1.7 million acres. However, interbreeding with the coyote (a species not native to North Carolina) has been recognized as a threat affecting the restoration of red wolves. Currently, adaptive management efforts are making progress in reducing the threat of coyotes to the red wolf population in northeastern North Carolina. Other threats, such as habitat fragmentation, disease, and anthropogenic mortality, are of concern in the restoration of red wolves. Efforts to reduce the threats are presently being explored.

Program Objectives

The current recovery plan (U.S. Fish and Wildlife Service, 1990) specifies the following objectives:

1) Establish and maintain at least three red wolf populations via restoration projects within the historic range of the red wolf. Each population should be numerically large enough to have the potential for allowing natural evolutionary processes to work within the species. This must be paralleled by the cooperation and assistance of at least 30 captive-breeding facilities in the United States.
2) Preserve 80% to 90% of red wolf genetic diversity for 150 years.
3) Remove threats of extinction by achieving a wild population of approximately 220 wolves and a captive population of approximately 330 wolves.
4) Maintain the red wolf into perpetuity through embryo banking and cryogenic preservation of sperm.

The Red Wolf Population

We estimate between 110 and 130 red wolves in the Red Wolf Recovery Area, but for the purposes of this report all population figures are comprised only of known wolves (i.e., wolves that are regularly monitored through either a functioning radio-collar or surgically implanted abdominal radio transmitter). Additional wolves are likely present, but have not been captured/radio-collared or their continued presence otherwise confirmed.

Population and Territory Status

A total of 89 known red wolves occupied the Red Wolf Recovery Area (i.e., 1.7 million acres in five counties in northeastern North Carolina) at the end of the second quarter of our fiscal year 2011 (FY 11). The population includes 29 packs (totaling 69 wolves) with 13 breeding pairs. An additional 20 wolves are not known to be associated with a pack. [A pack is defined as a known wolf maintaining an established territory who is either currently associating with or is known to have associated with another wild canid inhabiting the same territory.]

Wolf Pairings

One breeding pair was lost and three breeding pairs formed during the quarter. The breeding pair lost appears to be the result of displacement of the young breeding male wolf.

Wolf Captures and Radio Telemetry Marking

During this quarter, Red Wolf Recovery Program staff logged approximately 5,184 trap-nights. For that effort, 41 wolves were captured, 17 of which were first time captures. All wolves were fitted or re-fitted with radio-collars (VHF or GPS) or surgically implanted with abdominal radio transmitters, and released. Captured wolves consisted of 20 males and 21 females; 16 adults (> 2 years of age), 11 yearlings (1-2 years of age), and 14 pups (< 1 year of age).

Dispersals

Three known wolves (a yearling male, a yearling female, and a female pup) dispersed from their natal territories during the quarter. Two additional male wolves (1 adult, 1 yearling) were captured for the first time after dispersing from their natal territories, but the times of dispersal are not known.

Mortalities

One wolf (a yearling male) from the Red Wolf Recovery Area is known to have died during the quarter. His death appeared to be due to natural causes.

Disappearances

The Red Wolf Recovery Program lost radio contact with one wolf (a yearling male) during the quarter.

Pack Summaries

The Pack Summaries *section has been indefinitely discontinued due to recent events and current circumstances involving the apparent illegal take of red wolves within the Red Wolf Recovery Area.*

Collaborations

Research

The Red Wolf Recovery Program provided financial and in-kind support for collaborative research with scientists at other institutions, including universities, interagency divisions, and non-government research organizations. These investigations required project staff to assist outside researchers and graduate students in their efforts to better understand red wolf ecology, ecosystem function, and conservation efforts.

Project Title: Wild canid genetic sampling in Eastern North Carolina.
Graduate Student: Justin Bohling (PhD student)
Committee Chair/Principal Investigator: Lisette Waits, PhD, University of Idaho

Project Title: Inbreeding avoidance in red wolves.
Graduate Student: Kristin Brzeski (PhD student)
Committee Chair/Principal Investigator: Sabrina Taylor, PhD, Louisiana State University

Project Title: The effects of parenthood on red wolves (*Canis rufus*) in northeastern North Carolina.
Graduate Student: Justin Dellinger (MS student)
Committee Chair/Principal Investigator: Troy Best, PhD, Auburn University

Project Title: Identifying management procedures to reduce red wolf-coyote interactions in eastern North Carolina.
Graduate Student: Joseph Hinton (PhD student)
Committee Chair/Principal Investigator: Michael Chamberlain, PhD, Louisiana State University

Project Title: Use of stable isotope analysis to elucidate predation patterns of sympatric canids.
Graduate Student: Anne-Marie Hodge (MS student)
Committee Chair/Principal Investigator: Brian Arbogast, PhD, University of North Carolina at Wilmington

Project Title: Seasonal Cycles in Red Wolf Home Range Characteristics: A GPS Collar and Multispectral Satellite Image Study.
Graduate Student: Melissa Karlin (PhD student)
Committee Chair/Principal Investigator: John Chadwick, PhD, University of North Carolina at Charlotte

Project Title: Assessment of spatial and temporal activities of red wolves using GPS and VHF telemetry data.
Graduate Student: Melissa Karlin (PhD student)
Committee Chair/Principal Investigator: John Chadwick, PhD, University of North Carolina at Charlotte

Project Title: Dietary overlap between red wolves (*Canis rufus*) and coyotes (*Canis latrans*) in Eastern North Carolina.
Graduate Student: Justin McVey (MS student)
Committee Chair/Principal Investigator: Chris Moorman, PhD, North Carolina State University

Project Title: Evaluating potential effects of widening US Highway 64 on red wolves, Washington, Tyrrell, and Dare Counties, North Carolina.
Graduate Student: Christine Proctor (PhD student)
Committee Chair/Principal Investigator: Michael R. Vaughan, PhD, Virginia Polytechnic Institute and State University (Virginia Tech)

Project Title: Sperm morphology and motility of the red wolf (*Canis rufus*).
Graduate Student: n/a
Committee Chair/Principal Investigators: Albrecht Schulte-Hostedde, PhD, Laurentian University, and Gabriela Mastromonaco, PhD, Toronto Zoo

Publications

The following publications have gone to print in this quarter. A complete list of publications related to red wolves can be found at http://www.fws.gov/redwolf/biblio.html.

Sparkman, A. M., J. R. Adams, T. D., Steury, L. P. Waits, and D. L. Murray. 2011. Direct fitness benefits of delayed dispersal in the cooperatively breeding red wolf (*Canis rufus*). Behavioral Ecology 22(1): 199-205.

Presentations

No presentations by collaborators were reported during this quarter.

Staff and Volunteers

The Red Wolf Recovery Program employs eight full-time staff, including the program coordinator, four wildlife biologists, a biological technician, a public affairs/outreach coordinator, and an administrative assistant. The public affairs/outreach coordinator and administrative assistant positions are currently vacant. The Red Wolf Recovery Program also benefits from an unpaid intern (Caretaker).

Outreach

Staff from the Red Wolf Recovery Program conduct presentations and attend events to inform and educate the public on the conservation needs of the red wolf and the restoration efforts of the Red Wolf Recovery Program. As part of our effort to assist educators, red wolf "discovery boxes" that include materials about the red wolf are distributed to educational facilities. The distribution of discovery boxes is managed by the Red Wolf Coalition. Requests for discovery boxes should be made to kwheeler@redwolves.com.

The Red Wolf Recovery Program also seeks to achieve a quality visitor and participant experience in the U.S. Fish and Wildlife Service's priority recreational uses on National Wildlife Refuges. Our outreach efforts focus on four of the six program elements, including wildlife observation, wildlife photography, environmental education, and interpretation, and are conducted frequently in partnership with ARNWR and PLNWR educators and volunteers.

Presentations

Date	Location	Audience	Length	Attendance	Presenter
Jan 7	Beaufort Co.	Beech Ridge Hunt Club	1.5 hr	34	F. Mauney
March 4-6	Wake Co.	Dixie Deer Classic	3 days	24,000	M. Morse C. Heffley J. Collins
March 25	Durham, NC	Duke University - Carnivore Ecology and Conservation Discussion Panel	3 hr	~100	D. Rabon
March 30	ARNWR	USFWS Regional Directorate	3 hr	8	D. Rabon

Howlings

Date	Location	Event	Length	Attend	Presenter

No howlings were conducted this quarter.

Website / Social Media

The Red Wolf Recovery Program recently launched Facebook and Flickr internet pages. Our Facebook page connects our program with "friends" from around the globe and informs them of the conservation efforts of the Red Wolf Recovery Program. The Facebook page can be found at www.facebook.com/redwolfrecoveryprogram. Our Flickr page provides a site for users to view and download high resolution pictures related to red wolves and the Red Wolf Recovery Program. Our Flickr page can be found at www.flickr.com/photos/trackthepack.

The Red Wolf Recovery Program also has a weblog that highlights the efforts of the Red Wolf Recovery Program staff in the conservation of the red wolf. The weblog combines text, images, videos, and links to other media related to its topic. The content includes educational, informational, and general journal entries written by program staff, and allows readers to leave comments in an interactive format. The weblog can be found at trackthepack.blogspot.com.

Partnerships

Species Survival Plan (SSP)

Species Survival Plan (SSP) captive facility coordination is based at Point Defiance Zoo & Aquarium (PDZA) in Tacoma, Washington. The SSP currently coordinates 40 captive red wolf sites at zoos and nature centers housing about 175 wolves. The following information is based on activities completed or conducted by the SSP Coordinator during the quarter reported. Additional information on the SSP can be found at www.fws.gov/redwolf or redwolfssp.org.

The SSP Coordinator reported numerous correspondence and communications regarding red wolves, including giving a presentation on red wolves at the Gig Harbor High School (Gig Harbor, WA), coordinating the transfer of red wolf biomaterials to the Yale Peabody Museum of Natural History and the Virginia-Maryland Regional College of Veterinary Medicine, and coordinating with LightHawk, a not-for-profit pilot-based organization that provides flight services for environmental missions, on the potential availability of a pilot and aircraft to support red wolf fostering events. Rebecca Bose, of the Wolf Conservation Center (NY), facilitated the coordination with LightHawk.

The SSP Coordinator also reported the publication and distribution of the 2010 International Red Wolf Studbook. He also reported that two new projects related to red wolves were funded by the Point Defiance Zoo Society Conservation Funds: (1) $5000 for the project entitled "Evaluation of reproductive function in female red wolves following contraception with Deslorelin" (Dr. Karen Goodrowe); and, (2) $5700 for the project entitled "Red wolf graphic novel project: enhancing red wolf conservation through innovative education media" (Craig Standridge).

Island Propagation Sites

The U.S. Fish and Wildlife Service utilizes island sites to propagate red wolves and contribute to the restoration of a wild red wolf population, primarily by inserting island-born wolves into the wild population as a means to augment the wild red wolf gene pool with "under-represented" genes from the captive population. Currently, the Red Wolf Recovery Program cooperates with St. Vincent National Wildlife Refuge in maintaining a breeding pair of red wolves on an island site.

Red Wolf Coalition

The Red Wolf Coalition (RWC) is a non-profit organization based in northeastern North Carolina that advocates for the long term survival of red wolf populations through education and outreach. The RWC's educational program teaches students about the history, biology, and status of the red wolf recovery program, and accompanies students to ARNWR and PLNWR to learn about the habitat of the red wolf. The RWC currently employees an Executive Director, and has a membership of approximately 400 individuals and organizations. Additional information on the RWC can be found at www.redwolves.com.

The Executive Director reported conducting three red wolf education programs during the quarter. The first program was held January 14, 2011, in Plymouth (NC) for 14 middle school children from Exploris Middle School (Raleigh, NC). The second program was held February 18, 2011, via Skype, to 2nd graders from Randolph Elementary School (Randolph, NY). The third presentation was held February 28, 2011, at PLNWR for high school students from Hicks High School (Edenton, NC). The Executive Director also reported mailing six education packages containing the Far Traveler curriculum, a howling CD, red wolf tear sheets, the "Recovering a species" video, and RWC and FWS red wolf brochures.

The Executive Director reported finalizing and submitting grant applications for the Red Wolf Enclosure Project (www.crowdrise.com/enclosure/fundraiser/redwolfcoalition) at PLNWR. If funded, the grants will provide nearly $180,000 toward the construction of several enclosures to house red wolves, including a natural environment enclosure designed to showcase red wolves to the visiting public.

Announcements

The U.S. Fish and Wildlife Service continues the investigation of the suspected illegal take of two red wolves found dead in two different locations in Hyde County, North Carolina, and one red wolf found dead on Alligator River National Wildlife Refuge in Dare County, North Carolina. Contributions from various organizations and individuals have increased the amount of a reward of up to $15,000 for information directly leading to an arrest, a criminal conviction, a civil penalty assessment, or forfeiture of property on the subject or subjects responsible for the suspected unlawful take of these red wolves. The red wolf is protected under the Endangered Species Act. The maximum criminal penalties for the unlawful taking of a red wolf are one year imprisonment and $100,000 fine per individual. Anyone with information on the deaths of these red wolves or any others, past or future, is urged to contact Special Agent Sandra Allred at (919) 856-4786, Refuge Officer Chris Smith at (252) 926-4021, or North Carolina Wildlife Resources Commission Officer Robert Wayne at (252) 216-8225.